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Intelligent design theorists claim that their theory is neutral as to the identity of the intelligent designer, even with respect to whether it is a natural or a supernatural agent. In a recent issue of *Faith and Philosophy*, Elliott Sober has argued that in fact the theory is not neutral on this issue, and that it entails the existence of a supernatural designer. I examine Sober's argument and identify several hurdles it must overcome.

Proponents of Intelligent Design Theory (IDT) declare that it is no part of their theory to identify the designer implicated in the origin of some of the intricate structures found in nature. Most of the theory's leading defenders are candid in confessing to a personal belief that the designer is a deity, the God of Christianity. But, they declare, this personal belief is just that: a personal belief that is no part of the theory itself, any more than some cosmologist's belief that God initiated the Big Bang is for that reason part of the Big Bang theory. Michael Behe expresses the point this way:

> [W]hile I argue for design, the question of the identity of the designer is left open. Possible candidates for the role of designer include: the God of Christianity; an angel—fallen or not; Plato's demiurge; some mystical new age force; space aliens from Alpha Centauri; time travelers; or some utterly unknown intelligent being. Of course, some of these possibilities may seem more plausible than others based on information from fields other than science. Nonetheless, as regards the identity of the designer, modern ID theory happily echoes Isaac Newton's phrase hypothesis non fingo.[1]

Critics have alleged that this unwillingness explicitly to identify God as the intelligent designer is a sham: a thinly-veiled political tactic formulated in the wake of several court defeats for scientific creationists, by those who seek to have IDT introduced into public school biology classrooms, and who want to mainstream their view by publishing in respected scientific journals. Of course the motives of design theorists, political or not, are beside the point, philosophically speaking. We want to know whether *in fact* ID theory entails anything about the designer, and what mainly concerns both proponents and critics of intelligent design is the general question about whether the designer is a *supernatural* agent, since for most of the theory's critics that would be enough to undermine any legitimate claim

the theory might otherwise have had on the status of a genuine science, even without any other theological embellishments. Since Behe mentions certain embodied beings as candidates for the role of designer, clearly his position is that IDT does not require the designer to be supernatural, much less a deity.[2] The question is whether logically he is entitled to hold that position.

I.

Elliott Sober has argued that IDT is not in fact neutral on the subject of whether the designer is a supernatural being, because IDT *entails* the existence of such a being when it is combined with certain assumptions we are independently justified in accepting. He offers us the following definition of what it means for a proposition to have implications about whether supernatural beings exist:

> (E) Proposition *P* now has implications about the existence of supernatural beings if and only if there exist auxiliary assumptions *A* such that (i) *P&A* entails that there are supernatural beings, or entails that there are none, but *A* by itself does not have either implication, (ii) *A* is true, (iii) we now are justified in believing *A*, and (iv) the justification we now have for believing *A* does not depend on believing that *P* is true (or that it is false), and also does not depend on believing that there are supernatural beings (or on believing that there are none).[3]

According to Sober, IDT's[4] central thesis is the following proposition:

1. If a system found in nature is irreducibly complex, then it was caused to exist by an intelligent designer.

Sober now proceeds to show that (1) entails the existence of a supernatural designer when it is combined with propositions ((2), (4), (6), (7), below) that meet the conditions for auxiliaries described in (E).

2. Some of the minds found in nature are irreducibly complex.
3. Therefore some of the minds found in nature were caused to exist by an intelligent designer.
4. Any mind in nature that designs and builds an irreducibly complex system is itself irreducibly complex.
5. If the universe is finitely old and if cause precedes effect, then at least one of the minds found in nature was not created by any mind found in nature.
6. The universe is finitely old.
7. Causes precede their effects.
8. Therefore, there exists a supernatural intelligent designer.

Sober argues for (2) by referring to the way in which beliefs, memories, sense perceptions, desires and intentions each play a vital role in the functioning of a human mind, such that removal of any one of these would render it unable to function—the defining feature of an irreducibly complex system. The other auxiliaries seem unassailable, with the possible exception of (4), but we can stipulate to it here. Since the auxiliaries, in combination with what Sober offers as the central thesis of IDT, entail the existence of a supernatural designer, it follows according to (E) that IDT is not neutral on this matter, even if it does not entail the existence of a being having all of the familiar attributes of the Christian God.

II.

Sober's argument raises two general questions. The first question is about whether he succeeds in showing that IDT entails the existence of a supernatural designer. The second question is about what, if anything, follows from an affirmative answer to the first question, specifically in respect to the public policy issues that make the first question important. Since Sober does not take up this second issue I will ignore it as well, except to make the obvious point that IDT's entailing the existence of a supernatural designer will not at once settle these issues. What we decide on these further issues will depend on how we answer certain basic questions in fields ranging from philosophy of science to Establishment Clause jurisprudence. A considerable literature already exists on these matters.[5]

Regarding the first question, I see two challenges that Sober's argument must overcome. First, what he offers as the central thesis of IDT—proposition (1) in the above argument—seems not to in fact be the view's central thesis, even when (1) is suitably modified and interpreted. I'll address this issue in the next section. The second challenge calls attention to the fact that Sober appears to presuppose what Behe (whose notion of irreducible complexity Sober uses) seems not to grant, at least not explicitly: the applicability of (1) to systems in nature that are *minds*.

Suppose Sober is correct to characterize some minds in nature as irreducibly complex, and suppose as well that his proposition (4) is correct: any mind capable of *imposing* irreducible complexity on something else would itself have to be irreducibly complex. Still, in order to secure his conclusion, Sober must assume that any irreducibly complex mind must have its irreducible complexity *imposed upon it*, directly or indirectly, by an intelligence, a proposition distinct from (4), and that is true only if proposition (1) applies as much to natural systems that are minds as it does to bodies.[6]

That Behe does not mean to include minds in the range of (1) is suggested, although not strictly entailed, by the facts (i) that none of his examples of irreducibly complex systems in nature are minds; (ii) he requires of the parts of irreducibly complex systems that they be "well-matched," and the examples he uses to illustrate this concept all involve the spatial properties of the parts of the systems, making it difficult to see how the concept could be applied to mental parts such as beliefs and desires;[7] and (iii) Behe explicitly states that irreducible complexity is a sign of intelligent design when it is found in *physical* systems with *physically interacting* parts.[8] Where the parts of the system do not physically interact, Behe states, the

intervention of intelligence must be detected "in other ways."[9] So it appears that Behe would replace (1) with (1*) *if a physical system found in nature is irreducibly complex, then it was caused to exist by an intelligent designer*. Is that an arbitrary restriction of the principle? It's not clear that it is. The design theorist could claim that while we know enough about biochemistry to assert (1) of structures such as flagella,[10] we simply don't know enough about the way mental parts come together to form minds that we can assert with confidence the impossibility of beliefs, desires, memories, etc. being joined together by unintelligent means to form a mind.

If it is no part of IDT to posit the applicability of (1) to minds, then Sober has a problem: there are naturalistic hypotheses consistent with (1*) that stop the regress of explanation to a supernatural designer. If Sober's argument is to work, then he must adduce auxiliary propositions that, in combination with (1*), eliminate any such hypothesis from contention. Consider one example of such an hypothesis: the irreducible complexity in such structures as the flagellum was imposed on it by an alien intelligence with an irreducibly complex mind that supervenes on a physical brain that evolved by purely Darwinian means—a physical brain that is not *itself* an irreducibly complex structure. Behe supplies hypothetical examples of such creatures:

> [P]erhaps the original life is totally unlike ourselves, consisting of fluctuating electrical fields or gases; perhaps it does not require irreducibly complex structures to sustain it.[11]

This hypothesis halts the regress of intelligent designers at an alien intelligence, and nothing in (1*) rules it out. Sober must advance auxiliaries to rule it out, or concede that IDT does not lead us ineluctably to a supernatural designer.

Sober could argue that some mind-body identity thesis is correct, so that mental systems *are* physical systems. Or he could argue that irreducibly complex minds, if they are emergent phenomena, could only supervene on irreducibly complex physical systems. If the latter is true, then since according to (1*) irreducibly complex physical systems can only issue from intelligence, the irreducibly complex minds that emerge from these physical systems are themselves always indirectly the products of intelligence.

In this project, ironically enough, Sober is likely to enjoy the *help* of design theorists. After all, given their personal convictions doubtless they too want to reject the alien hypothesis, along with any other hypothesis that halts the regress of intelligent designers in the same way. If the auxiliary assumptions needed to rule out the alien hypothesis are not available, then so much the worse for Sober's argument, but so much the worse as well for design theorists who hope that a compelling natural theology can be started where design theory leaves off.[12]

III.

Assume for argument's sake that the needed auxiliaries can be found, and that (1*) in combination with these auxiliaries and those already supplied by Sober entails the existence of a supernatural designer. Then *if* (1*)

really is the central thesis of IDT, it follows by (E) that IDT is not neutral as to the metaphysical status of the designer. This brings us back to the first challenge I mentioned for Sober's argument: that what Sober offers as its central thesis—proposition (1)—is not in fact the central thesis of IDT, even when modified to (1*).[13] This challenge can now be cast as consisting of three claims:

- (1) is not the central thesis of IDT, even when modified to (1*).
- (1*) plays a central role in a *justification* for intelligent design theory that most design theorists use, but it is not clear what that entails vis-à-vis the commitments of the theory itself.
- Design theorists advance multiple arguments for their view, some of which do not use (1*), or they do not make an argument with (1*) carry all or most of the evidential burden.

Consider two statements, from Behe and William Dembksi, respectively, that appear to express IDT's central claim:

> To a person who does not feel obliged to restrict his search to unintelligent causes, the straightforward conclusion is that *many biochemical systems were designed.* They were designed not by the laws of nature, not by chance and necessity; rather, they were *planned*. . . . Life on earth at its most fundamental level, in its most critical components, is the product of intelligent activity.[14]

> As a theory of biological origins and development, intelligent design's central claim is that only intelligent causes adequately explain the complex, information-rich structures of biology and that these causes are empirically detectable.[15]

These authors appear to treat (1*) not as IDT's central thesis, but rather as a general principle that would figure in a developed general science of intelligent design detection, a science that would supply us with rules to follow in detecting intelligence in a wide variety of contexts, from arson investigation to SETI.[16] Intelligent design theorists frequently allude to the need to develop such a science, suggesting, plausibly enough, that probably it would codify the same rules we use intuitively every day to detect the workings of intelligence. That Behe regards the italicized phrase in the first quote as IDT's real thesis, and something like (1*) as just a familiar inference rule, is suggested in his remarks that "inferring that biochemical systems were designed by an intelligent agent is a humdrum process that requires no new principles of logic or science," just "consideration of the way in which we reach conclusions of design every day." It is almost as if Behe treats Sober's (1*) like *modus ponens*—an inference principle used in arguments for his theory, but not in any ordinary sense part of the theory itself.

So what design theorists tell us are two things:

(i) There are generally reliable rules for determining of things whether they are the products of intelligence. Codifying such rules is the

proper subject matter of what might be called the *science of intelligent design*.

(ii) When the science of intelligent design is applied to some of the structures we find in nature (such as bacterial flagella), we find that these structures *are* the products of intelligent design. That these structures are products of intelligence is the central thesis (label it IBD) of the *theory of intelligent biological design*.[17]

It seems that when design theorists claim that their theory is neutral as to the identity of the designer they have in mind IBD as the central thesis of their view. When they proclaim that IBD is neutral on the subject of the designer's identity they mean that IBD is logically consistent with any number of naturalistic scenarios, and that it is not the business of design theory to discover whether any of these is tenable. Sober, on the other hand, is interested in whether the theory of intelligent biological design is neutral on this subject in the sense of neutrality expressed by (E).

Now, if Sober can show that IBD, combined with suitable auxiliaries, entails the existence of a supernatural designer, then his thesis still stands. But it seems he cannot do this, for there is no way to move from IBD to a supernatural designer without employing as *auxiliaries* certain propositions the truth of which Sober is not likely to concede (such as that no designing intelligence could evolve by purely Darwinian means), which means that by his own lights they could not serve as auxiliaries. As we have seen, for example, it is at least conceivable that structures such as the flagellum were designed by an alien intelligence that seeded life on earth. In order to show that these aliens could only be a link in a chain of intelligent causes that leads back ultimately to a supernatural designer one would have to demonstrate with auxiliaries that no alien intelligence capable of this feat could itself have evolved by purely natural means. And this is where we will need the sort of premise the truth of which Sober is likely to reject, rendering it off limits as an auxiliary.

This brings us back again to (1*). Sober's argument still succeeds if it is plausible, by virtue of the role it plays in the main argument design theorists give for IBD, to treat (1*) as in some way part of intelligent design theory, or part of the IBD research paradigm. Here arise the last two parts of the three-part challenge I described above. Consider the last of these: arguments for IBD based on propositions other than (1*) can be found in design theory literature. Dembski argues from a more general feature called specified complexity, of which irreducible complexity is supposed to be one species. Meyer et al., mention as an indicator of intelligent design a "top down pattern [found in the fossils from the Cambrian explosion] of innovation in which large-scale morphological disparity arises before small-scale diversity."[18] Paul Nelson and Jonathan Wells appeal to the phenomenon of homology as evidence for IBD.[19] Some of these arguments may employ propositions that actually lead us to a supernatural designer more clearly than does (1*), but there is no guarantee of that, nor any guarantee that all such arguments will employ propositions that get us there in one way or another. What if design theorists use several arguments to support IBD, and only one of them utilizes a proposition

that, combined with propositions that meet Sober's criteria for auxiliaries, entails the existence of a supernatural designer?[20]

Of course, the diversity of arguments marshaled for IBD by design theorists is not a problem for Sober if none of those that do *not* refer to irreducible complexity has any plausibility. In other words, if the only plausible way to argue for IBD is by use of a premise that combined with auxiliaries leads to a supernatural designer, then effectively the theory is not neutral on this question. But Sober does not argue for the implausibility of any alternative arguments for IBD, or suggest explicitly that no plausible alternatives are on the horizon.

Suppose for argument's sake that all of the primary arguments design theorists give for IBD do employ at least one proposition that entails the existence of a supernatural designer when combined with propositions that meet Sober's criteria for auxiliaries. Then the theory of intelligent biological design entails the existence of a supernatural designer if it is reasonable to say that the theory (or paradigm, or research program, if these more expansive concepts are helpful here) encompasses the methodological principles that are used by design theorists to identify structures as intelligently designed. Is this reasonable? It appears to be. This is especially true given the contested status of these principles (such as (1*)), Behe's claim that inferring design requires no new principles of logic or science notwithstanding.[21] If , on the other hand, IBD is evidenced (adequately) in some cases without any recourse to propositions that entail a supernatural designer according to (E), then any attempt to draw conclusions about design theory's logical commitments vis-à-vis the designer will have to be undertaken on a case-by-case basis, perhaps distinguishing several versions of the theory. In this case, Sober's thesis is correct, but only when aimed at certain versions of design theory. [22]

Lest we begin to miss the forest for the trees in these logical exercises, it is worth observing that whether or not we can formulate some notion of a theory or research tradition that permits us to say in a strict sense that the theory of intelligent biological design entails the existence of a supernatural designer, might from a practical standpoint be beside the point. It remains the case that if one cannot discuss the evidential basis of this theory, or carry out research under this paradigm, without referring to a set of contested principles that, when their entailments are worked out, lead us to the supernatural, then a supernatural figure will always loom large in treatments of design theory, like an elephant in the room that IBD researchers *qua* IBD researchers decline to talk about. Whether and how that fact should bear on design theory's claim on the status of a science, and on the related issues of public policy, remains to be settled.

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NOTES

1. Michael Behe, "The Modern Intelligent Design Hypothesis," *Philosophia Christi* 3 (2001), p. 165. Cf. William Dembski in *The Design Revolution:*

Answering the Toughest Questions about Intelligent Design (Intervarsity Press, 2004, p. 188): "[F]rom the vantage of intelligent design, treated strictly as a scientific inquiry, no theological or antitheological position has a privileged place. Intelligent design, as a scientific research program, attempts to determine whether certain features of the natural world exhibit signs of having been designed by an intelligence. This intelligence could be E.T. or a telic principle immanent in nature or a transcendent personal agent. These are all, at least initially, live options." See also Appendix A of the amicus brief filed by the Discovery Institute in the case of *Kitzmiller v Dover Area School District*, available on the website of the Discovery Institute. In this document there is a curious vacillation in the many quotes taken from design theorists between claiming that identifying the designer is beyond the purview of intelligent design theory, claiming that it is beyond the purview of *science*, period, and intimating that *if* one seeks to link the designer in IDT with the god of some religion, *then* one must go beyond science into the realms of philosophy and religion. Clearly only the first and last theses can be maintained by a design theorist consistently with their claim not to be committed to anything as to the designer's metaphysical nature. The suggestion that identification of the designer lies beyond science in general could only rest on knowledge of the designer's nature that, by hypothesis, we don't have.

2. Dembski has suggested that the designer referred to in ID theory need not be *real*: it could in principle be treated by design theorists as a mere useful fiction, if that should better fit with a particular design theorist's philosophy of science. For convenience I will leave this suggestion aside and assume that for most if not all intelligent design theorists the designer really exists. For Dembski's remarks see *No Free Lunch* (Rowman and Littlefield, 2002), p. 15; cf. *The Design Revolution*, p. 65.

3. Elliott Sober, "Intelligent Design Theory and the Supernatural: The 'God or Extra-Terrestrials' Reply," *Faith and Philosophy* 24 (2007), p. 78.

4. Or rather what Sober refers to as the "mini-ID" thesis, which is IDT stripped of any explicit description of the designing agent.

5. See, for example, the discussion by Del Ratzsch in his *Nature, Design, and Science* (Albany: State University of New York Press, 2001). On the legal issues (vis-à-vis design theory in public school classrooms), see Francis Beckwith, *Law, Darwinism, and Public Education* (Lanham, MD: Rowman and Littlefield, 2003); Eugenie Scott and Glenn Branch, *Not in Our Classrooms* (Boston: Beacon Press, 2006); and the opinion by Judge Jones in the *Kitzmiller* case (U.S. District Court for the Middle District of Pennsylvania, 2005), available online at http://www.talkorigins.org/faqs/dover/kitzmiller_v_dover.html.

6. An exception might be made for any minds whose irreducible complexity never had a first origination, if there any such minds.

7. See Behe's "Self-Organization and Irreducibly Complex Systems: A Reply to Shanks and Joplin," *Philosophy of Science* 67 (2000), p. 157; cf. Dembski in *No Free Lunch*, p. 283. Behe illustrates his point about well-matched parts with an example of a system in which the parts are not well-matched: "Together a lever and fulcrum form an interactive system which can be used to move weights. Nonetheless, the parts of the system can have a wide variety of shapes and sizes and still function. Because the system is not well-matched, it could easily have been formed by chance." Behe's example (p. 158) of a biological system with well-matched parts again makes reference to the spatial properties of the parts: "thrombin selects [a] particular bond for cleavage out of literally hundreds of thousands of peptide bonds in its environment and ignores almost all others. It can do this because the shape of thrombin is well-matched to the shape of fibrinogen around the bond it cleaves."

8. *Darwin's Black Box*, pp. 194, 223.

9. See *Darwin's Black Box*, chap. 9, note 3. Here he refers to the work of Dembksi on specified complexity, which I will mention in Section III.

10. If Behe were to suggest that irreducible complexity is *necessarily* the product of intelligence, and that this connection is one we know *a priori*, such that there is no need even to consider the candidate Darwinian explanations for irreducible complexity in biological systems, then he could not avoid using Sober's (1). But I don't find Behe making that claim, and most of *Darwin's Black Box* is devoted to Behe's critique of the Darwinian explanations (cf. his remarks near the bottom of p. 203). So he is claiming to know from experience that irreducible complexity in physical systems is a good indicator of intelligence. As for irreducible complexity in non-phsyical systems, he might simply claim not to have sufficient data on which to make a claim one way or the other about the need for intelligence here. The nearest I find Behe coming to something like (1) is on p. 204, at which he states that "Our ability to be confident of the design of the cilium or intracellular transport rests on the same principles as our ability to be confident of the design of anything: the ordering of separate components to achieve an identifiable function that depends sharply on the components." It's not clear how Behe squares the use of 'anything' here with his remarks in the note referenced in note 9, above.

11. *Darwin's Black Box*, p. 249.

12. An anonymous referee suggests that Sober's argument might benefit from referring (presumably in premise 2) to systems that are a complex of brain and mind together. It's not clear to me whether a system such as this can be described as irreducibly complex, however, especially if the mental components of it are mere epiphenomena. We would have to specify carefully the function of this system (Sober claims the mind's function is to enable us effectively to navigate through our environment; cf. Behe on identifying functions in *Darwin's Black Box*, p. 196), and then it must be the case that removal of any mental part or physical part from this system would destroy the function. Finally, it must be claimed that any such system as this could only issue from an intelligent cause—that (1) is applicable to systems such as this. As I mentioned above, it's not clear that we know enough about such systems to make this claim; we are much more familiar with purely physical irreducible systems.

13. Sober states that he refers to irreducible complexity in Behe's sense, but as Dembski points out in *No Free Lunch*, proposition (1) is probably false where the crucial term is used in Behe's sense. Recall that irreducible complexity is not about the number of parts a thing has, but the way in which each part is crucial to the object's functioning (at least when the parts are 'non-arbitrarily' individuated, as Dembski puts it; cf. Sober's discussion of the individuation issue in his article). Dembski concedes that for an irreducibly complex object with very few parts, it is not impossible that purely Darwinian mechanisms might produce it "in one fell swoop." Dembski proceeds (pp. 279–89) to refine Behe's concept of irreducible complexity in such a way that (1) becomes plausible, at least on his view. According to his final definition, "A system performing a given basic function is *irreducibly complex* if it includes a set of well-matched, mutually interacting, nonarbitrarily individuated parts such that each part in the set is indispensable to maintaining the system's basic, and therefore original, function. The set of these indispensable parts is known as the *irreducible core* of the system." Even with this understanding of the key term in (1), however, our question remains about the status of (1)—whether it is the central thesis of intelligent design theory.

14. *Darwin's Black Box*, p. 193; emphasis added in the first sentence.

15. *The Design Revolution*, p. 34. Cf. the definition offered by the Discovery Institute on their website: "The scientific theory of intelligent design holds

that certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection."

16. Notice that (1) is not a historical statement, but rather a putative law. It's not clear to me whether this fact reflects on Sober's part a view about the *types* of propositions that are allowed to function as the central theses of theories. Certainly, however, there are many other theories that make historical statements their central postulates, from Big Bang theory, to the collision-ejection theory of the moon's origin, to the Pangaea theory in geology, to the theory of common descent in biology. See the discussion by Frederick Suppe in *The Structure of Scientific Theories* (Champaign: University of Illinois Press, 1977), chap. IV.

17. We might distinguish also the *theory of intelligent cosmological design*, which alleges the need for a designing intelligence vis-à-vis the basic physical constants of the universe. From this theory's central postulate a supernatural designer would seem to follow much more obviously than it does from the theory of intelligent biological design, assuming it is implausible to suppose that our spacetime world is some alien's laboratory experiment

18. Stephen C. Meyer, Marcus Ross, Paul Nelson, and Paul Chien, "The Cambrian Information Explosion: Biology's Big Bang," in *Darwin, Design, and Public Education*, ed. John Angus Campbell and Stephen Meyer (Ann Arbor: Michigan State University Press, 2003), pp. 323–402 (esp. section V). The authors appeal to other features of organisms originating in the Cambrian explosion as well, at least one of which appears to be the analogue of Behe's concept of irreducible complexity.

19. Paul Nelson and Jonathan Wells, "Homology in Biology: Problem for Naturalistic Science and Prospect for Intelligent Design," in *Darwin, Design, and Public Education*, pp. 303–22.

20. We must always remember here that the fact that most design theorists themselves will probably believe that auxiliaries do exist that can take us from certain propositions they employ to support IBD to a supernatural being (by ruling out the sorts of logically possible alternative naturalistic scenarios they mention; see Behe, for example, in *Darwin's Black Box*, p. 249, where he states that he finds the naturalistic alternatives unsatisfactory, and in his "Irreducible Complexity: Obstacle to Darwinian Evolution," in W. Dembksi and M. Ruse, *Debating Design* (Cambridge: Cambridge University Press, 2004), p. 357, where he appears to concede that his arguments "point strongly beyond nature") is beside the point, since they may simply be *wrong* in their belief that these auxiliaries exist. The question is never about whether design theorists personally believe or hope that a natural theology can be started from one or more of these propositions, but whether it can in actuality.

21. For a discussion of the place of methodological principles in theories and what he calls *research traditions*, see chapter 3 of Larry Laudan's *Progress and its Problems* (Berkeley: University of California Press, 1977); Laudan's discussion includes a critical analysis of the views of Kuhn and Lakatos. Cf. Beckwith's attempt to show that although the bare thesis that variation and natural selection explain biological complexity does not entail atheism, Darwinism nonetheless entails the non-existence of supernatural agents because (according to Beckwith) it is supported by its proponents partly by the principle of methodological naturalism, which Beckwith believes entails ontological materialism (philosophical naturalism). See *Law, Darwinism, and Public Education*, pp. xxiii (note 5), 103, 149, 157. Beckwith is illustrative as well of the tendency of some design theorists to portray, or to seem to portray, "Intelligent Design Theory" as a whole research paradigm that encompasses not just IBD and the biology-specific formulations of the rules for identifying intelligent design, but the theory of intelligent cosmological design as well, and even views

about personhood (p. 104) and the metaphysics of morals (p. 105). It is difficult to tell in some cases whether these other propositions are to be regarded as all part of one paradigm, or just more personal commitments of (all? most?) design theorists that are in some way connected with IBD.

22. The exact formulation of the methodological propositions used can be crucial here, not just in respect to the metaphysical status of the designer, but also in respect to another question frequently raised in reply to IBD and the theory of intelligent cosmological design: *who designed the designer?* Depending on the methodological principles advanced for identifying the intervention of intelligence, design theorists may or may not be able to forestall an infinite regress of designing intelligences.